

FIG. 1

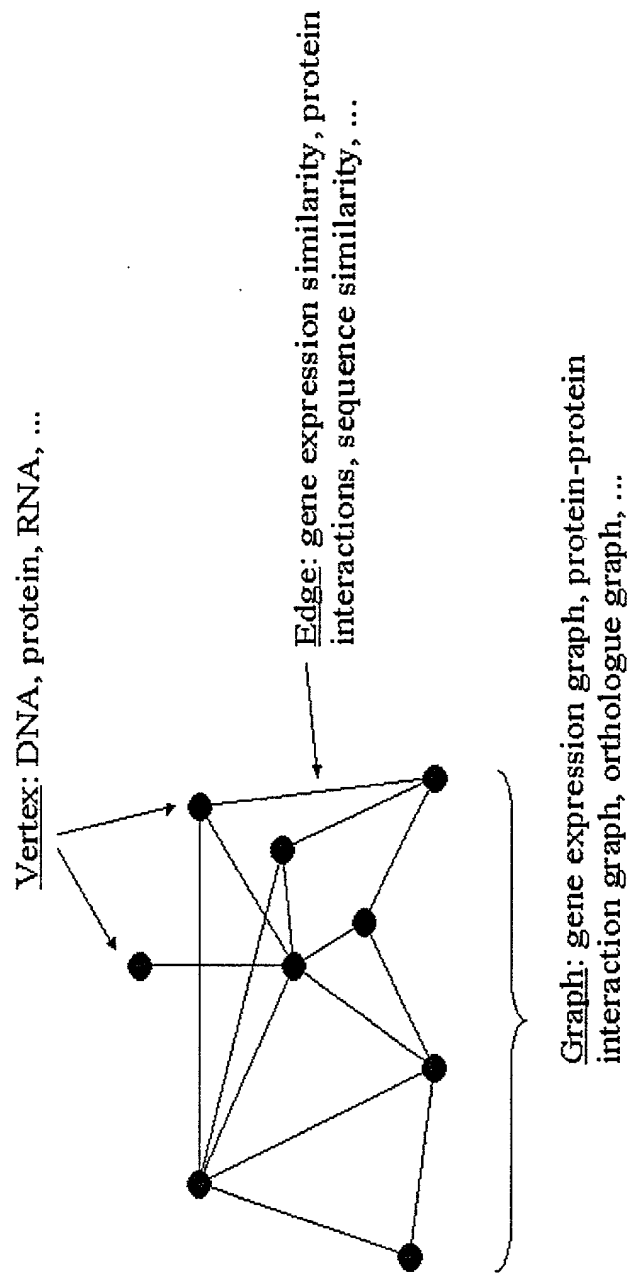


FIG. 2

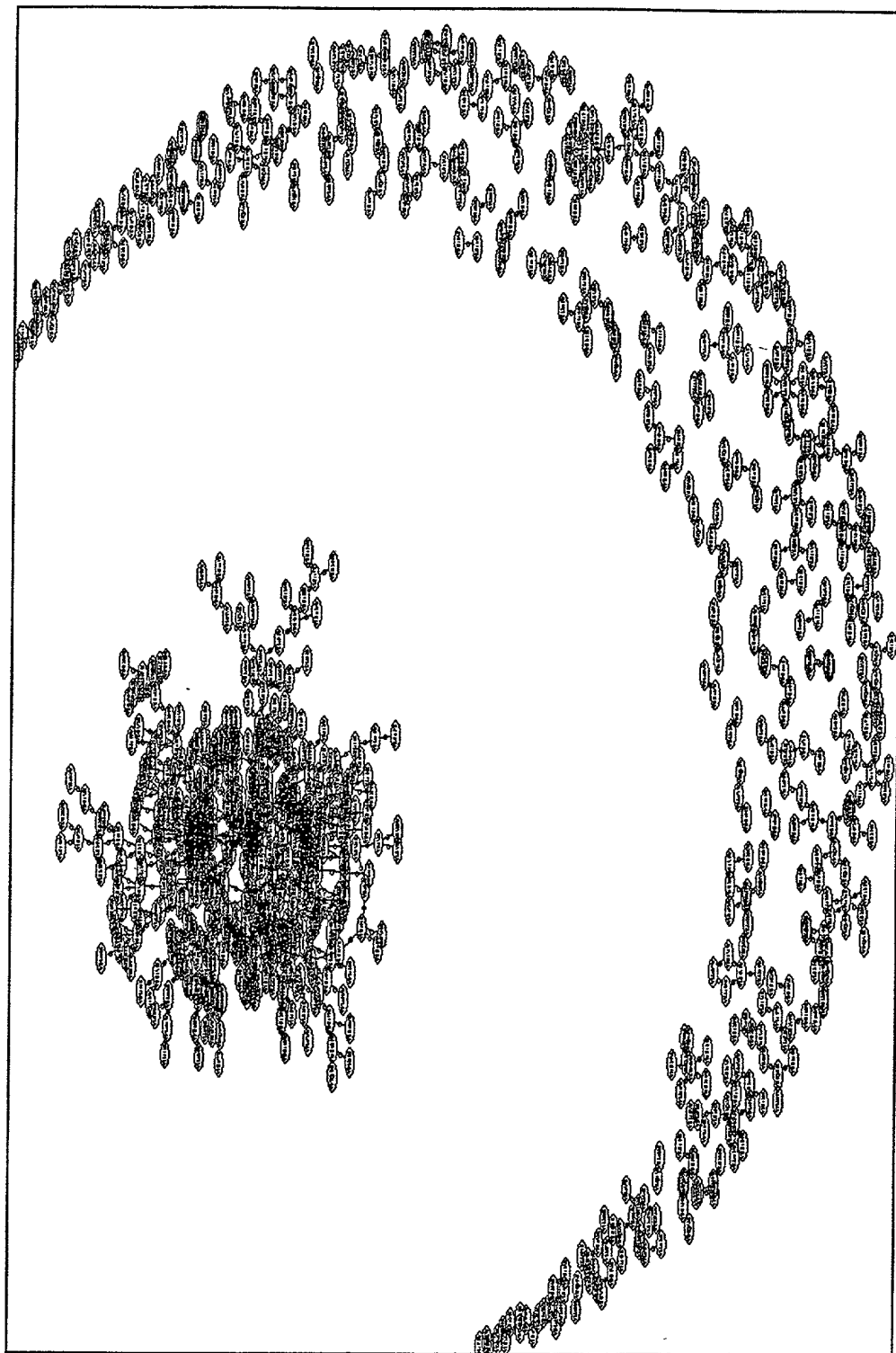


FIG. 2

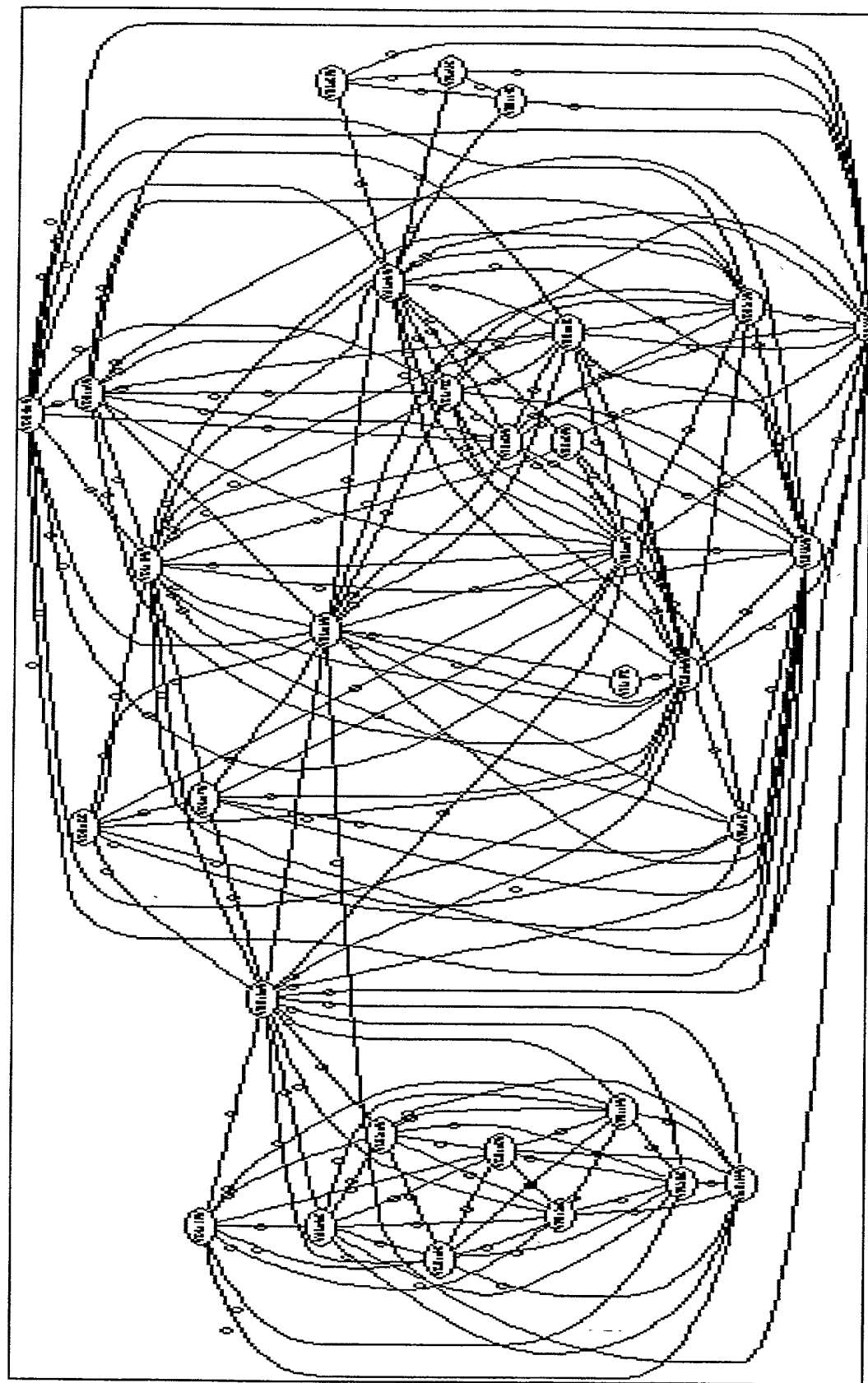


FIG. 3

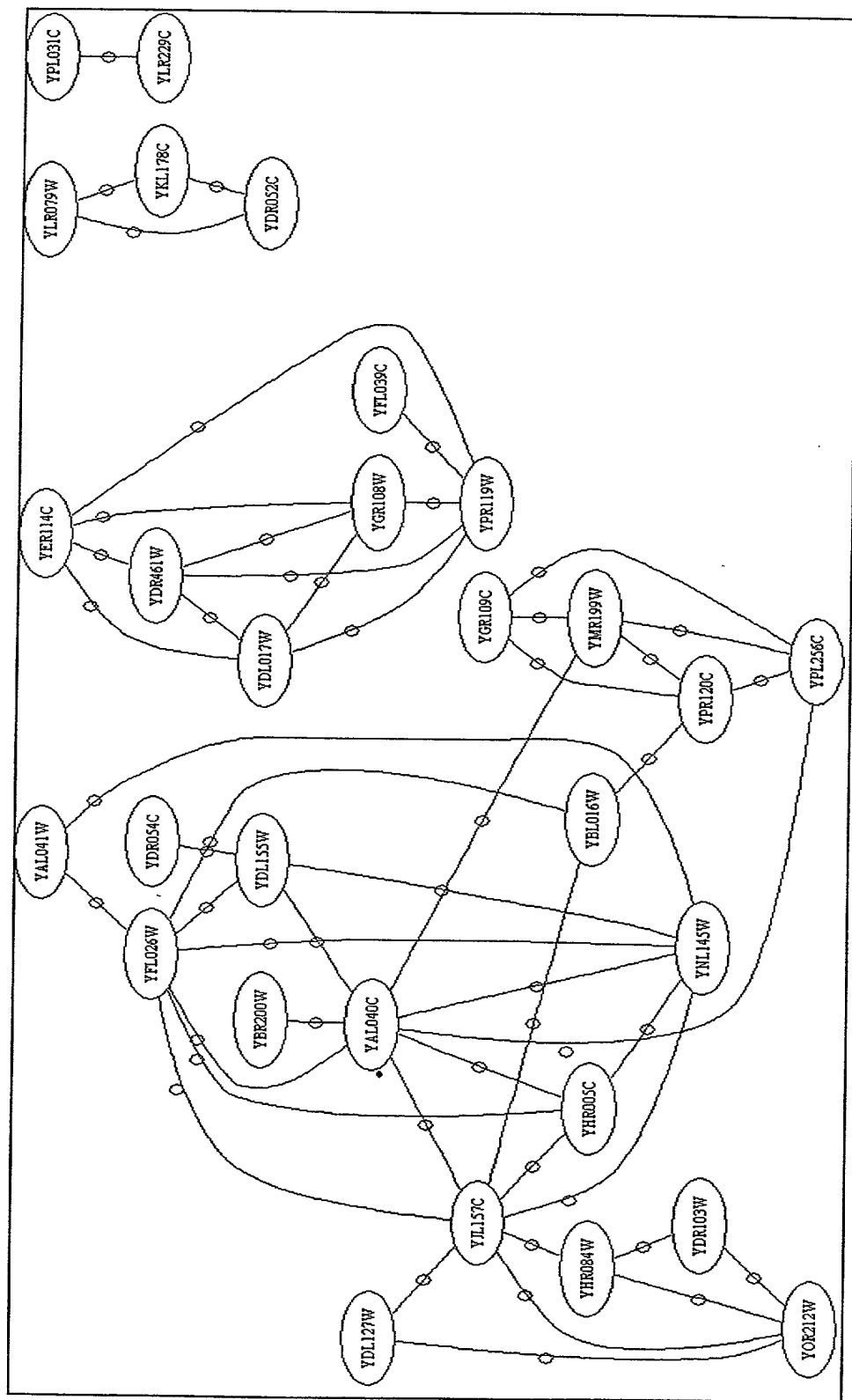
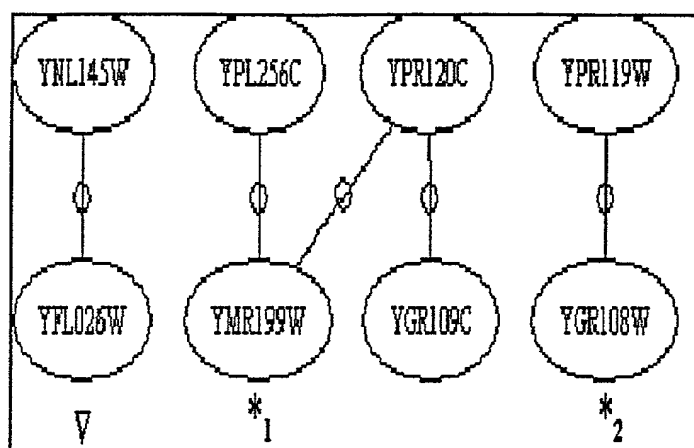
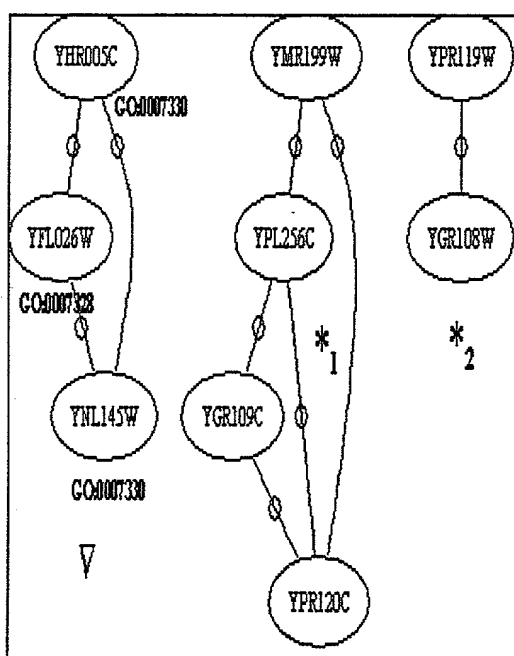


FIG. 4

B



C



E

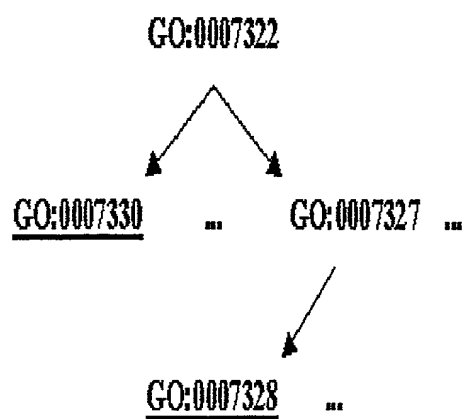


FIG. 5

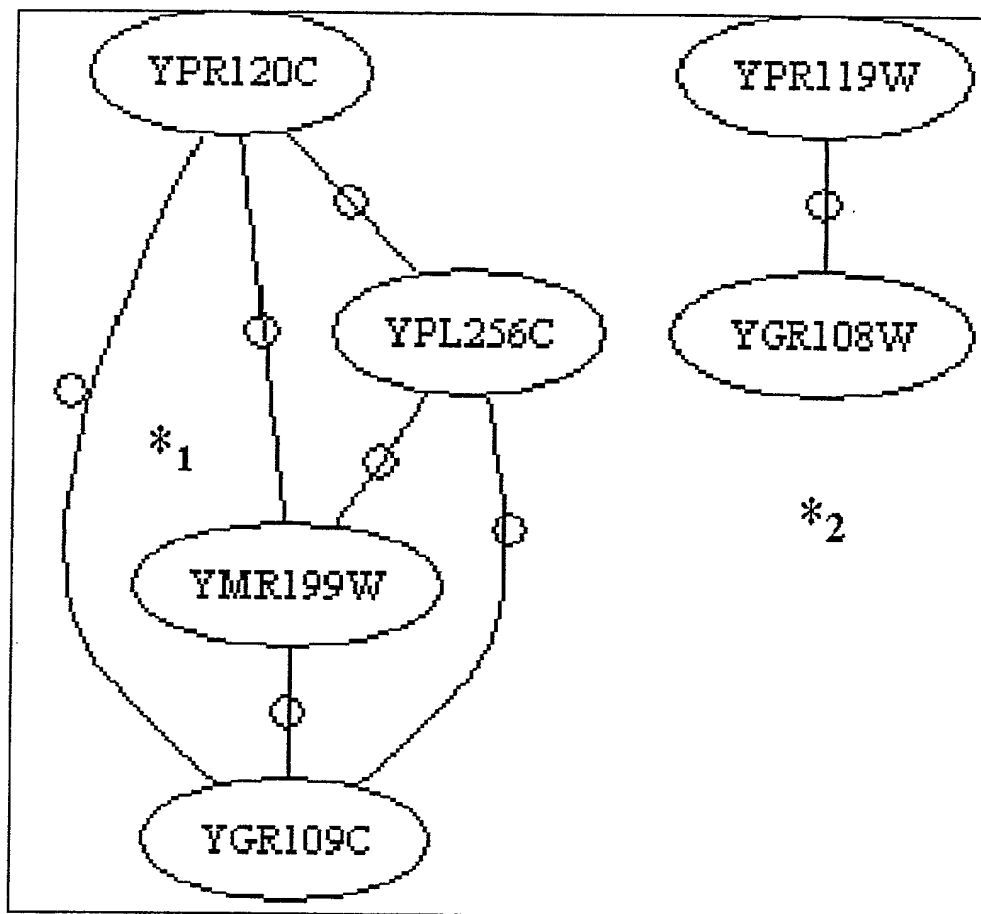


FIG. 5A

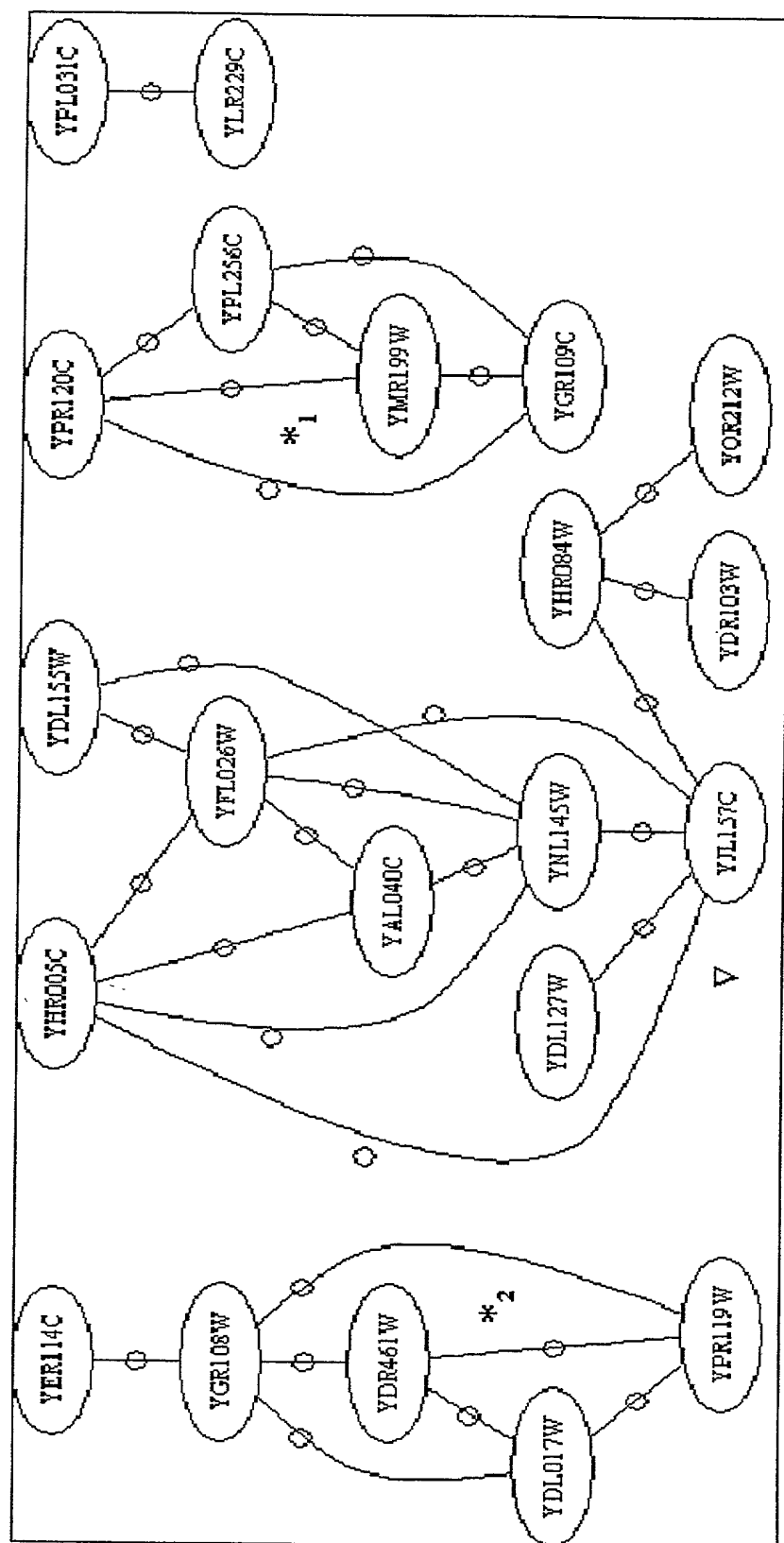


FIG. 5D

Conceptual Design of Data Mining System: An Overview

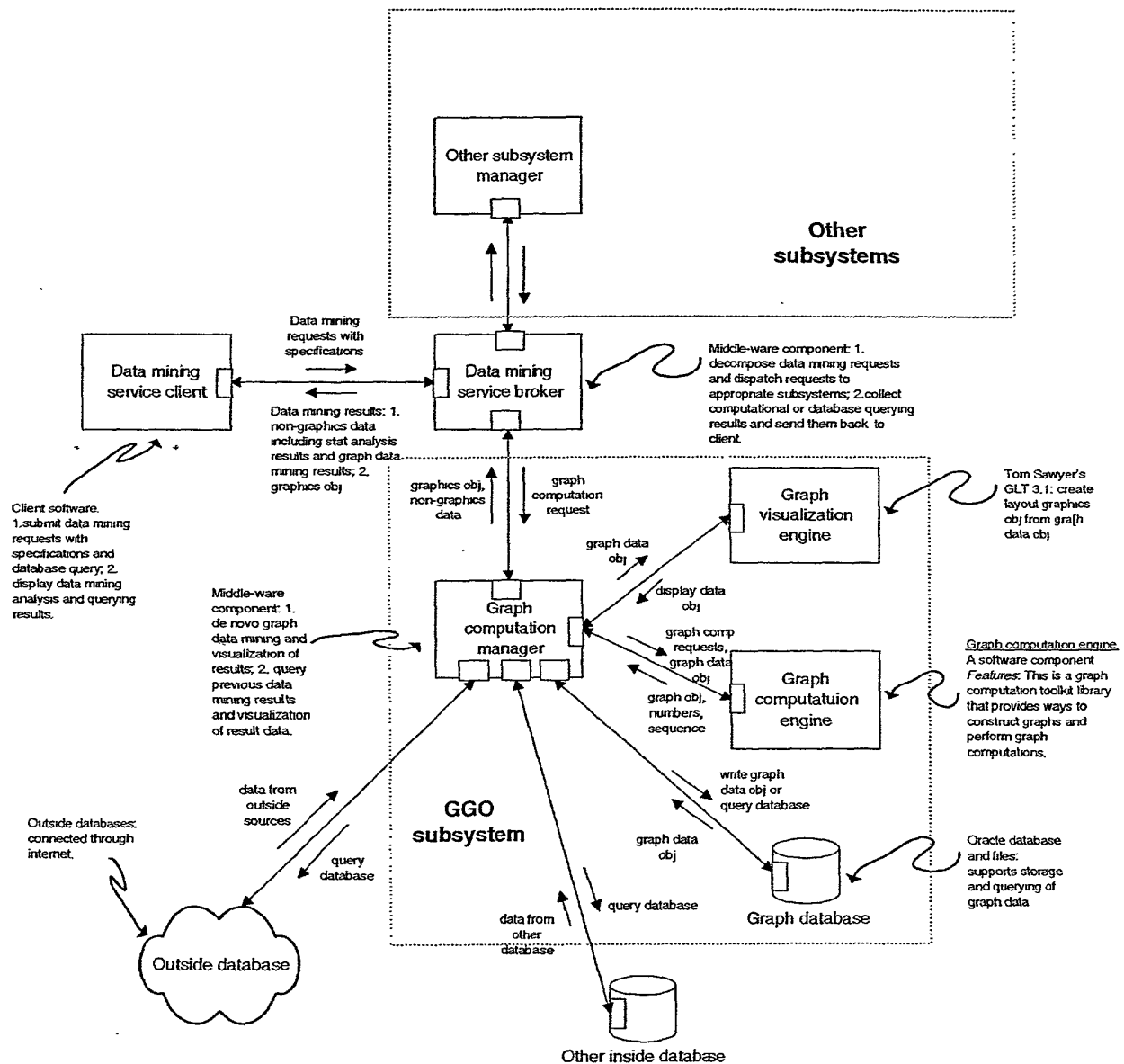


FIG. 6

Data mining service client

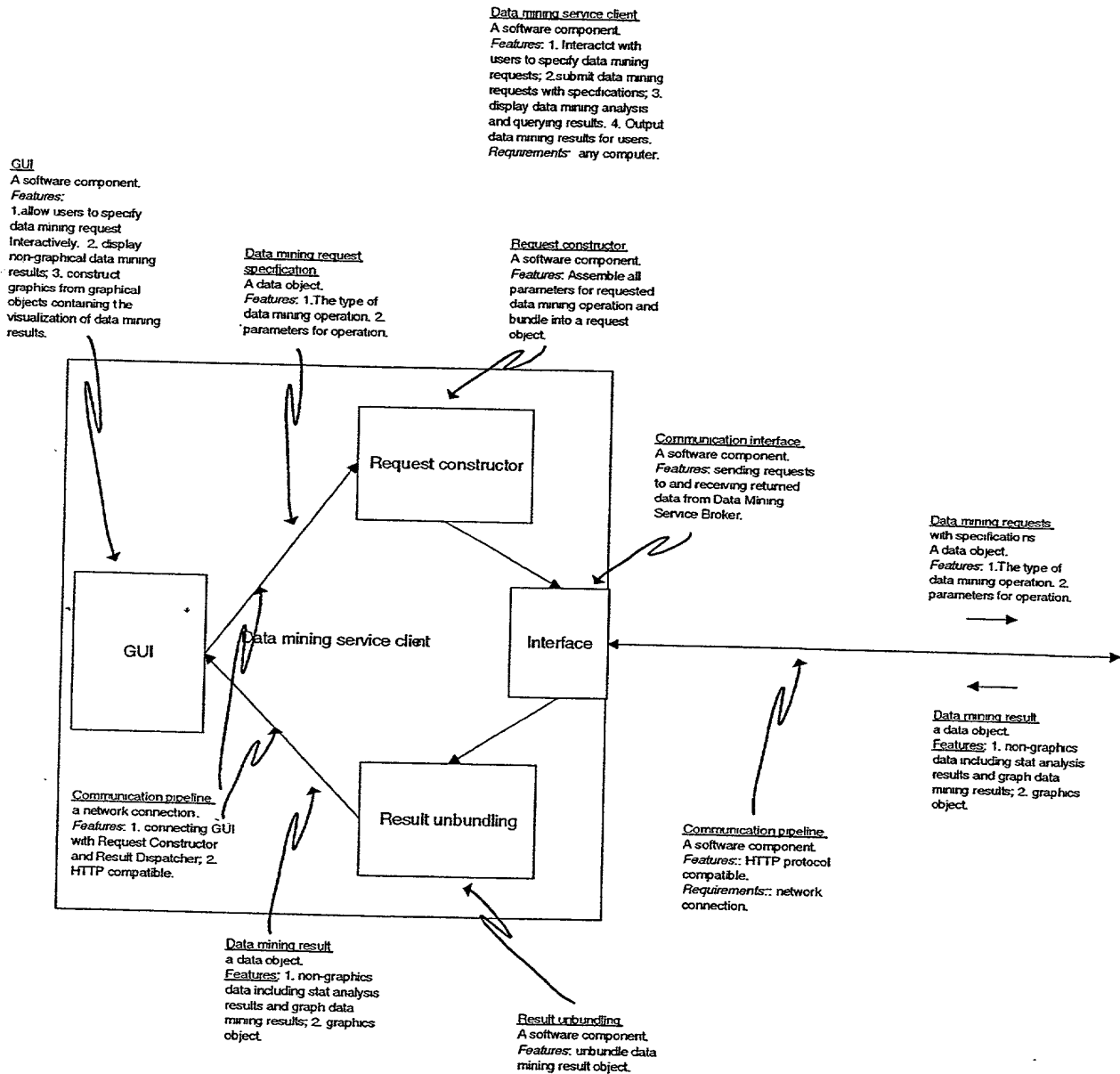


FIG. 7

Data mining service broker

Data mining service broker.

A software component.

Features: 1, communicate with multiple data mining service clients. 2, decompose data mining request object and dispatch requests to appropriate subsystems; 3, receive computational or database querying request objects and send them back to client.

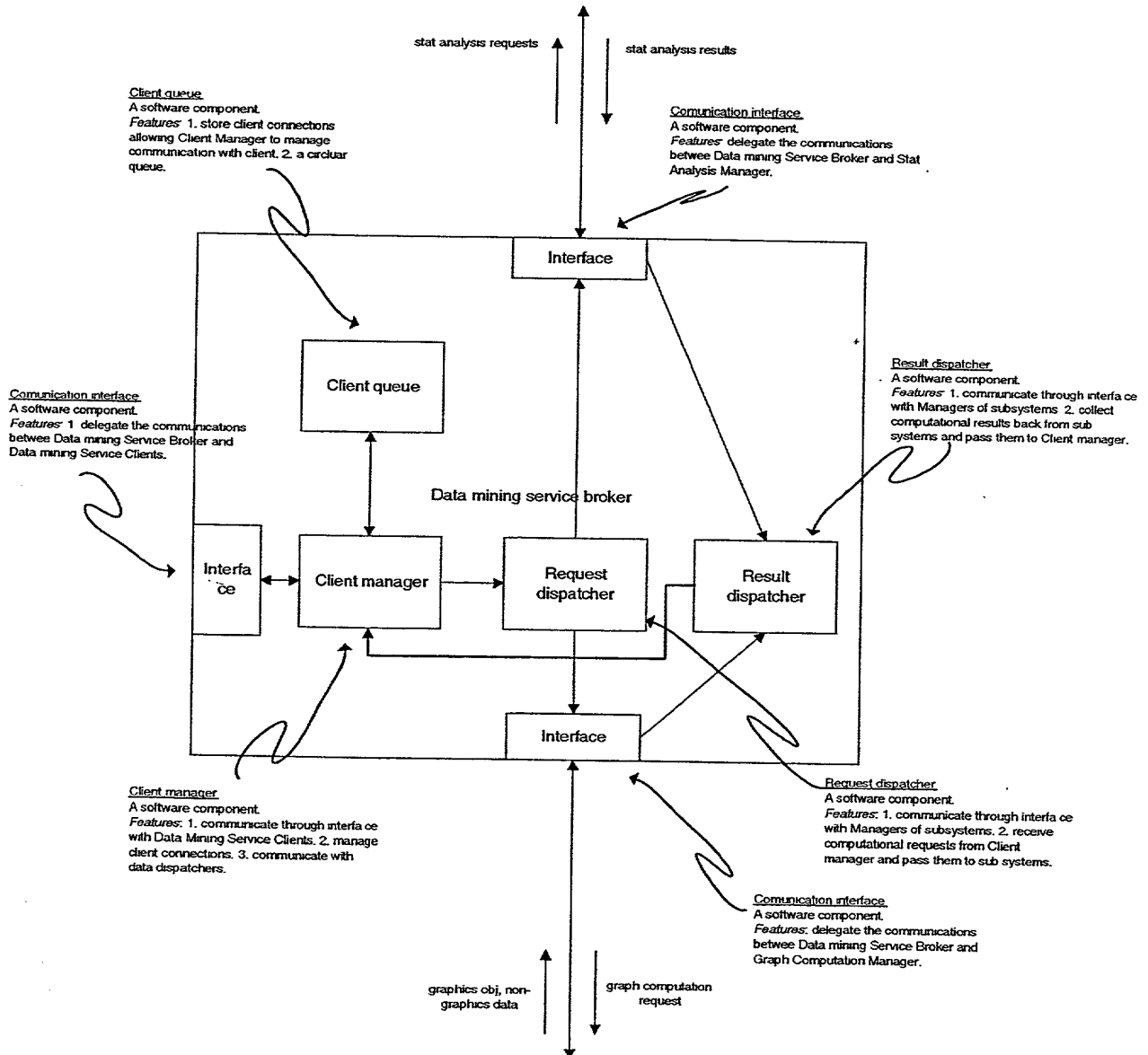


FIG. 8

FIG. 9

Graph computation engine

Graph computation engine

A software component
Features: This is a graph computation toolkit library that provides ways to construct graphs and perform graph computations.

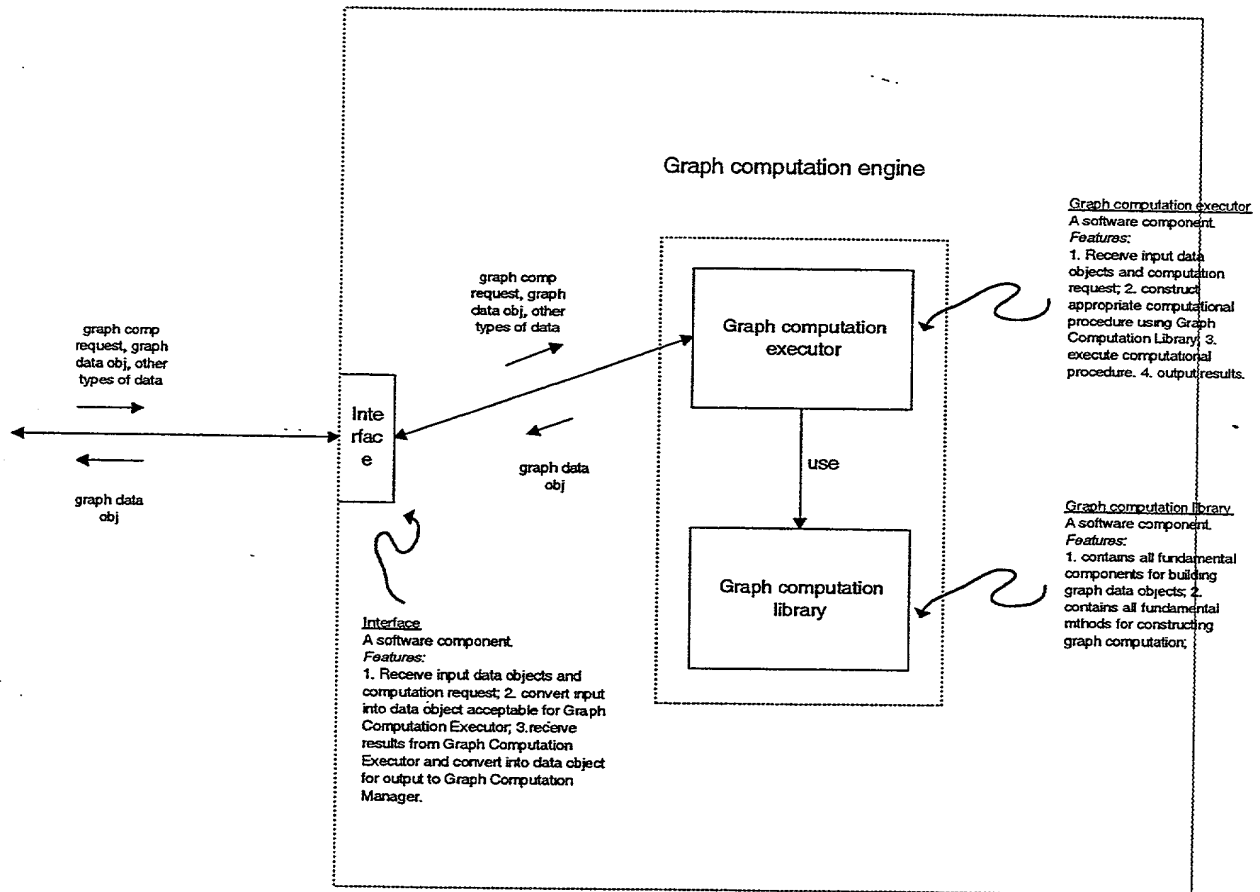


FIG. 10

Graph visualization engine

Graph visualization engine

Features:

generate graphical
visualization of graph data.

Graph visualization constructor

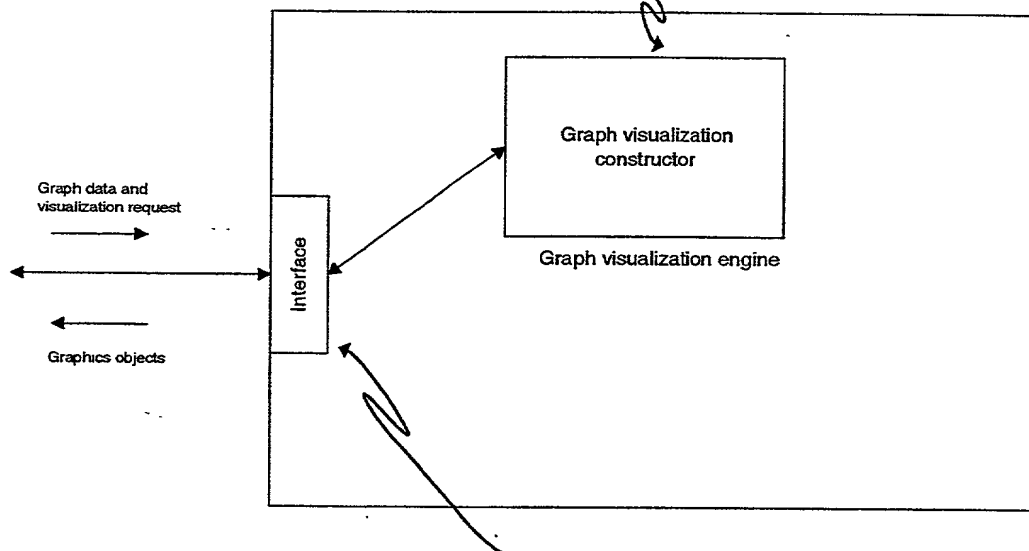
A software component.

Features:

construct graphics object from
graph data.

Implementation:

Tom Sawyer's GLT or GET 3.1:
create layout graphics object
from graph data.



Communication interface

A software component.

Features: delegate graph
visualization requests and
results between Graph
Computation Manager and
Graph Visualization Engine.

FIG. 11

Graph computation library

Graph computation library

A software component.

Features:

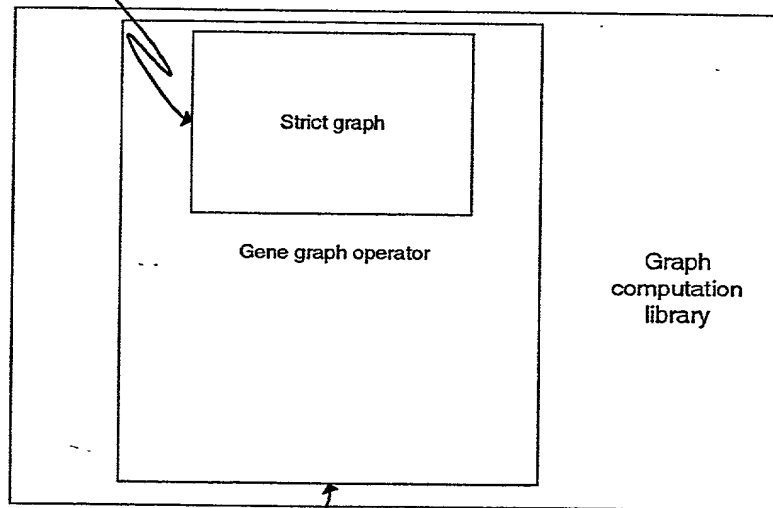
1. contains all fundamental components for building graph data objects;
2. contains all fundamental methods for constructing graph computation;
3. contains all fundamental methods for building gene graph objects.

Strict graph

A software component.

Features:

1. Provides all representations for graph data objects.
2. Provides all methods for computation of graph objects.



Gene graph operator

A software component.

Features:

1. Provide representations for all types of gene graphs.
2. Delegate the underlying graph representation and computation to Strict Graph component.

FIG. 12

Data interface

Data interface

A software component.

Features:

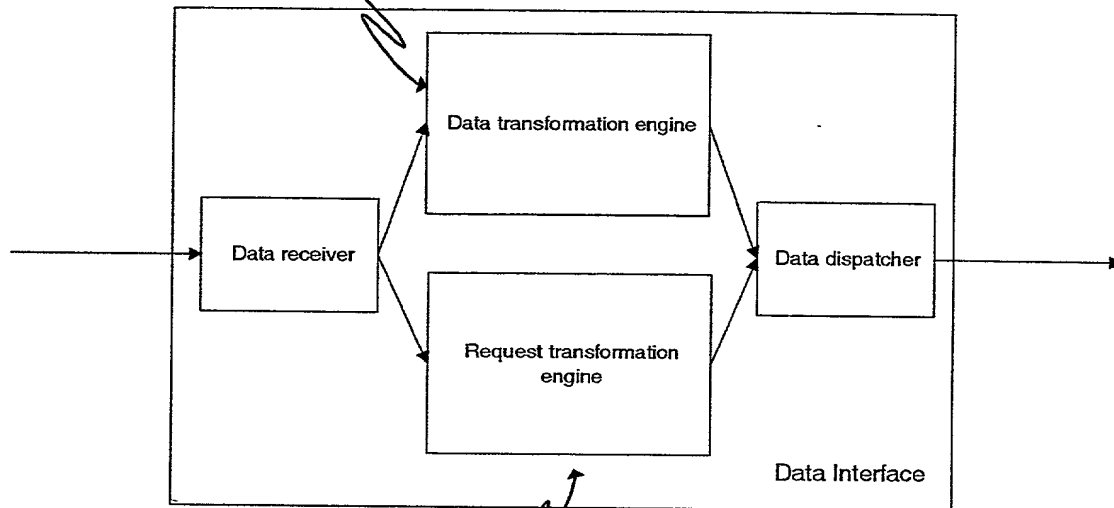
1. Receive, transform, and output computational request data objects;
2. Receive, transform, and output graph data objects.

Data transformation engine

A software component.

Features:

Transform graph data objects so that graph data can be converted from a source format into a destination format.



Request transformation engine

A software component.

Features:

Transform computational request data objects so that requests can be converted from a source format into a destination format.

FIG. 13

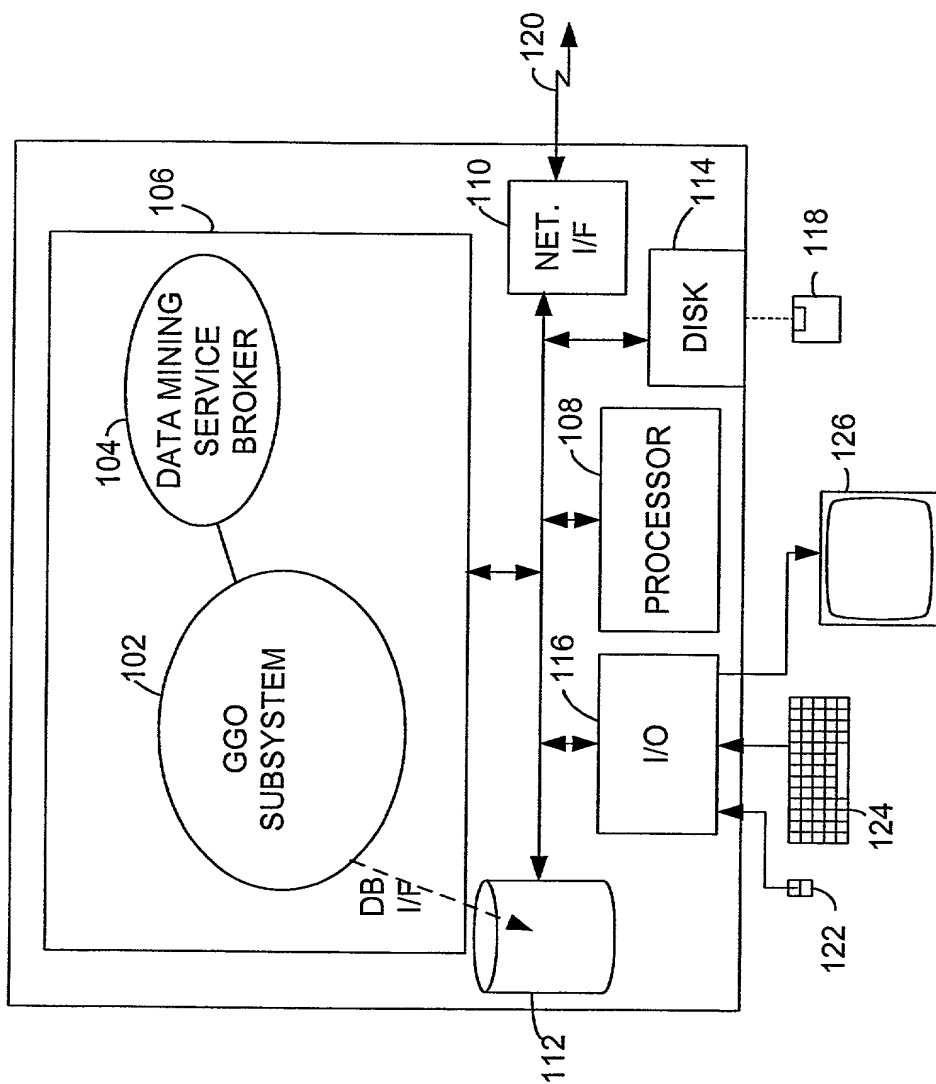


FIG. 14

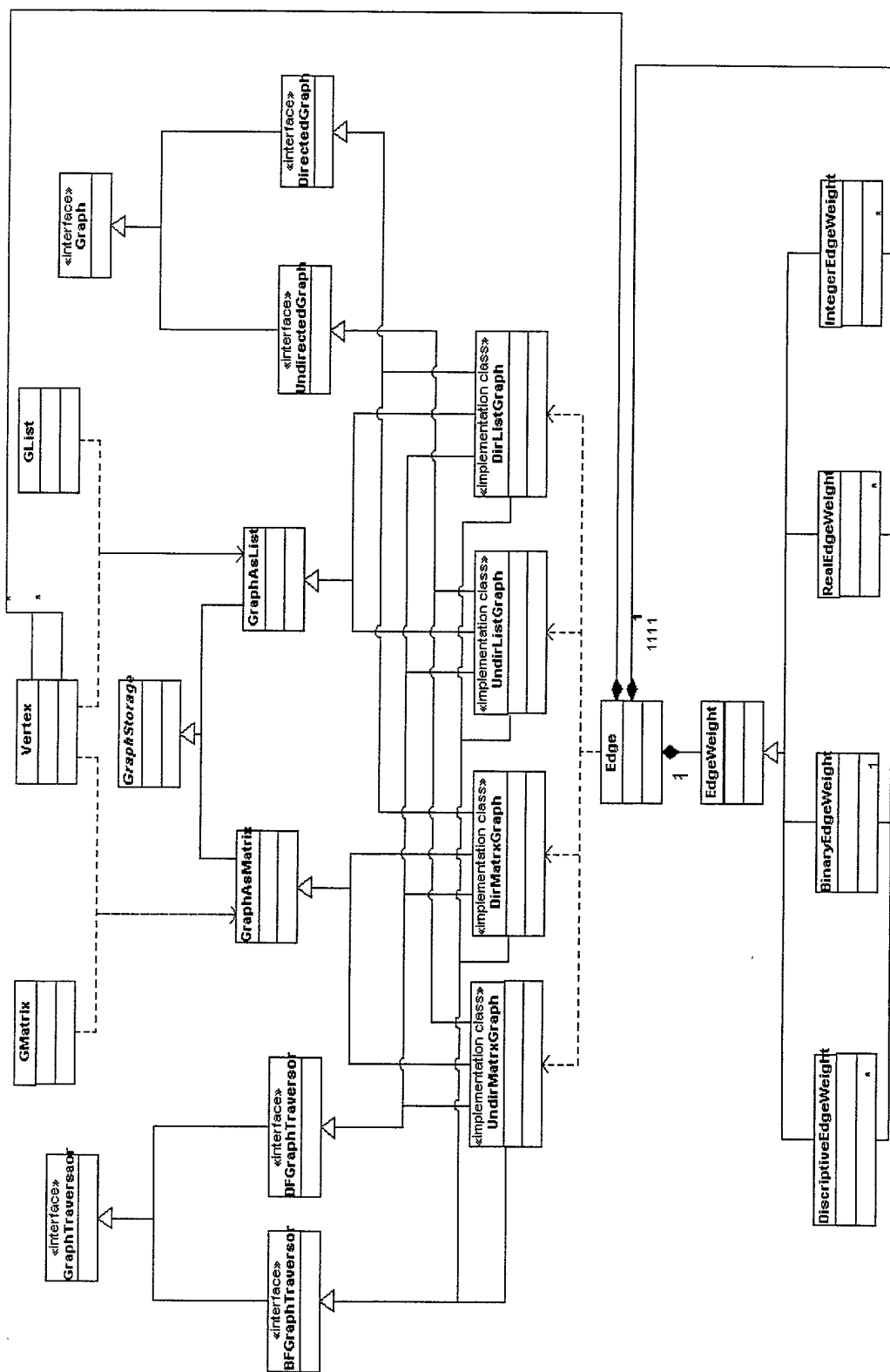


FIG. 15